ON SCENE

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ON SCENE

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COVER: *U.S. Life Saving Station #10 Cape Elizabeth Maine. Date of picture unknown.*

ON SCENE is a quarterly, authorized, special interest publication, produced by the Office of Navigation Safety and Waterway Services for members of the U.S. Coast Guard and the SAR community. Editorial content is not to be considered as authority for official action, nor as record material. Individual views and opinions expressed do not necessarily reflect those of the Department of Transportation or the U. S. Coast Guard.

CHIEF, OFFICE OF NAVIGATION SAFETY
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To "On Scene" Readers:

The Coast Guard has adopted a new management style known as "TQM." These three initials may soon be as important to us as "SAR." "Total Quality Management" is a philosophy of pursuing continuous improvement in every process through the integrated efforts of all members of the organization. This philosophy and the tools it employs are currently used by the best world class organizations and have proven most successful.

Using the vehicle known as the Idea Express Program, the Coast Guard has reaped many positive suggestions from those "on scene" within the Coast Guard. Our "On Scene" magazine provides another method to promote new ideas or better ways to prosecute Search and Rescue. Sharing your thoughts and experiences with other readers could make the difference in life threatening situations.

In the spirit of TQM, I strongly encourage you to continue providing your ideas. Remember, ideas are like questions...the only "bad idea" is the one not brought forth. We genuinely welcome your ideas, as well as your comments and articles.

SEMPER PARATUS!

R. A. APPELBAUM
Rear Admiral, U. S. Coast Guard

Boat Crew Professionalism

By: CWO Jake Miller, (G-NRS-2)

This edition let's talk about some real stuff. When I wrote about senior people getting more involved in operations and training last year, your feedback centered on work load and provided different reasons for our present situation. The common theme was simple: there is not enough time available. While visiting stations this past year I heard the same refrain: "we're two-blocked."

G-NRS is taking a closer look at station work load. We've published notices on how to cut back on paper work. We are studying station and group staffing, with an eye toward strengthening our budget requests for more people. We continue to work with the other headquarters program managers to minimize new station tasking. Whatever we do though, it won't be enough.

Face it, in this budget climate the odds of our getting more money and people are rather poor. Meanwhile, we'll have to live with what we do have, and come up with creative ways to use our people more efficiently. Let's look at one aspect that is at least somewhat controllable: duty rotation.

Everything else aside, there's a radical difference between port and starboard duty and one out of three or four rotations. The difference is in the number of people available during the work day for maintenance, administrative work and training. The bottom line is that a station standing a P&S rotation, routinely has only half their crew available. To illustrate this, let's take a look at how the numbers break out.

Typical Coast Guard Station Swaunee River has a crew of 24, a one B-0 readiness requirement and, for the sake of argument, assume everyone pulls duty. Let's also assume that normal administrative and maintenance work is done during the normal work day, five days a week. If Station Swaunee River pulls P&S duty they have 12 people on board each day. If each of them puts in a full 8 hour work day, Monday through Friday that works out to 12 X 8 X 5 = 480 work hour a week. Now if the OIC, BMC Ancient, changed the duty rotation to 1 in 3's, with a sliding weekend, (everyone gets 2 days off a week) they would have all 24 members on board 3 days a week for (24 X 8 X 3 = 576) work hours. Plus, two thirds of the crew, 16 people, would be there for an additional 2 days a week, or 256 work hours. The total for a station would be (576 + 256 = 832) hours for work available a week. Between the two rotations there is a 352 hour a week (73%) difference. From where I sit, and admittedly it is not your seat, 73% more hours for admin. and maintenance is something worth looking at.

What are the effects of P&S vs. 1 in 3 rotation? CO/OIC's, XPO's, and EPO's are buried in paper work and rarely get underway. To fix this, some stations take people off the duty roster and make them full time administrative workers or supervisors. From strictly a readiness point of view - this is unacceptable. Everyone at a station, except maybe the cook (and that's arguable), should participate in operations. Just as important, is having times when "all hands" are available for training.

So what are the draw backs to a 1 in 3 or 1 in 4 rotation. Even if the command people and the cook don't pull duty there should be 20 members available for duty. This gives two sections of seven people each and one of six people. It should be adequate.

What's that I hear? What about OOD's and communications watch standers? And hey! What about school and leave. Good questions, but they are not unsolvable. Even with two people gone, five people can handle all the watch duties, here's how.

First, let the coxswain be the OOD (senior watch officer). I've seen it work. The main purpose of a station is its boat operations. When the boat is underway the most qualified person in the watch section should be on board. Most operational decisions are better made by the coxswain on scene than by someone back at the station.

Second, the boat crew and communications watch can be pulled by some of the same people. Boat crewmen can rotate through the communications watches. Whoever isn't on watch goes out with the boat. If necessary, you can even switch people to fit case requirements.

Third, the minimum boat crew size for a 41' UTB, according to the Operator's Manual, is three. I realize some of our operations (LE) make this hard to adhere to, but when possible, why not? It makes duty rotation management a little easier.

Finally, in fairness I should talk about the advantages to a P&S rotation. Two items come to mind: It ensures you'll never be caught short for any possible operational contingency, and it's great liberty. Regarding the first, remember that we are not staffed based on the possible, but rather the probable. As to the second, it provides for some spectacular liberty compared to say, what our ship board compatriots pull. The first time I heard of P&S (a long time ago) I thought "Half the time on duty, Yech." Now though, the way most of our stations run it, it is better described as half the time on liberty.

One hundred and eighty-two days (plus leave) off a year is really not bad. Especially compared to the average ship - away from home port 180 plus days a year, one in three duty when in port, and weekends off if you don't have duty. When you compare the two it's no wonder we have a hard time enticing people into sea tours. And when you compare it with 104 days off (plus some leave) that you get with one in threes, I begin to understand the appeal. Unfortunately, it also means accepting 78 less working days per person each year. Can your station afford it.

As you can see, I found my soap box. I'm well aware that not all of my comments fit every station. I offer them for your consideration. Use what you can. Most important, feel free to respond. That's what this is all about; we want your ideas. If you send us a letter, we will print it. And hey, remember, you can always call me at (202) 267-2868 and chew on my ear. If you want to gang up on me, send a letter inviting me, or anyone from our staff, to your next CO/OIC conference. Things like that bring out our latent masochism. Until next issue, keep sailing, it's more fun than pushing paper. os

Rescue & Survival Systems Notes

By: CWO Mark O. Hyde, G-NRS-2

Cold Water Survival (IMMERSION) Suits

A Coast Guard District recently completed informal testing of survival suits used by their units. This was initiated after a Coast Guard vessel discovered 35 of 40 survival suits on board failed testing. Results of the final survey concluded that 100 of 604 survival suits were found faulty.

The results of this survey concerns me. I've been reading the National Transportation Safety Boards (NTSB) accident review of an Alaskan fishing vessel's sinking. According to the NTSB, the crew was alerted in adequate time to obtain and don their

survival suits. The suits were located conveniently on a shelf in a berthing space minimizing the time to obtain one. However, the survival suits worn by three crewmembers were not zipped fully when their bodies were recovered, and had considerable water in the suits. An examination of the zippers revealed that they were corroded and very difficult to operate. It is probable that they were not zipped fully when the crewmembers entered the water. Although subsequent tests revealed that the survival suits of the deceased crewmen leaked, appeared to be old, and not adequately maintained, the suits probably were capable of providing substantial protection for several hours had they been correctly zipped. If some crew training in survival procedures had been conducted on this vessel, it is probable that the poor condition of the vessel's survival suits would have been recognized.

The code of federal regulations (CFR 160.171) sets requirements for manufactures of exposure suits to follow. Contrary to popular belief, survival suits do not keep a victim totally dry. Survival suits will weep water. In certification tests, CFR 160.171 allows for up to 18 ounces of water to enter a new survival suit, in the first minute after entering the water. The CFR allows for 7 more ounces of water to enter the suit in the next hour. All testing is performed in calm water. What all this boils down to is a victim in a properly maintained survival suit should survive at least 6 hours in 32 degree water.

You can increase your chance of survival by getting involved in local training. Some Coast Guard vessels have an annual requirement for all ship's personnel to don and swim in survival suits. This is an excellent way to get familiar with the donning procedures of a survival suit. ***Remember, this suit when properly used can save your life!*** os

Look For Hazards During SAR Operations!

During a recent SAR case a Coast Guard HH-65A responded to a F-16 crash. After the crew arrived on scene and searched for the missing pilot a call was received. The crew was notified by RCC that a toxic chemical, Hydrazine, and possibly unexploded ordnance may be aboard the crashed aircraft. Exposure to Hydrazine can result in symptoms ranging from dizziness to kidney and liver failure. Due to possible exposure, the aircrew were taken to a nearby hospital for tests and the aircraft was quarantined for decontamination. A second crew had to be recalled and another aircraft made available for SAR standby.

This incident highlights the potential dangers inherent in some SAR cases. Efforts have been taken to educate RCCs of the potential hazards found aboard aircraft in service today. AFRCC, Scott AFB has updated checklists to provide this information for rescue crews. If responding to a military aircraft crash, obtain information to any hazardous material or ordnance involved. As with any SAR case, the crew should take prudent care when searching the wreckage. os

SAR R&D

By: R. Q. Robe, R&D Center ISARC Project Officer and CDR S. R. Osmer, (G-NRS-1)

Since 1978 the SAR Program has had a major R&D effort ongoing at the Coast Guard's Research and Development Center in Groton, CT. This project was originally known as the Probability of Detection in Search and Rescue (POD/SAR) Project and work was focused upon quantifying the visual search capabilities of Coast Guard search units. Preliminary work was done in the area of electronic search for both surface and airborne radars. This work was largely completed in 1989. The resulting product consisted of a set of sweep width data which accounted for search unit differences, search target differences, and environmental variations. This data base supported a comprehensive analysis of visual search test data collected permitting the first comprehensive revision of POD information since WWII. This information was incorporated in the revised National SAR Manual published in 1986. Preliminary POD data on a limited number of visual distress signalling devices was developed for the first time. Sweep width values for surface radar, SLAR, and FLAR were developed during a major experimental effort in 1987 and 1988 and incorporated in the National SAR Manual.

In 1989 a need was recognized to broaden the scope of the research work devoted to SAR to include other elements of the SAR problem. The Improvement of Search And Rescue Capabilities (ISARC) Project was initiated and established as a full project in 1990. This project has the objective of providing a framework for a broad range of research efforts for the SAR mission area. Initially the ISARC project has been divided into six individual project elements: Comprehensive SAR, Improved Visual Search Effectiveness, Improved Electronic Search Effectiveness, Improve POD Modeling, Improvement of Target Drift Prediction, and Evaluation of Distress Signalling Devices.

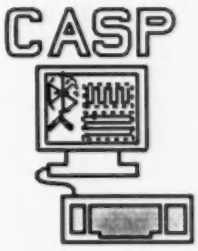
As a result of work in Comprehensive SAR, the entire project will be restructured to include project elements for SAR Incident Initiation, SAR Planning, Search Execution, Rescue Execution, and Post Search Analysis. An entirely new work breakdown structure is expected to be in place by FY92.

ISARC research during FY90 included Night Vision Goggle (NVG) field testing for HH-3's and UTB's off Fort Pierce, FL (spring) and in Block Island Sound (fall); joint R&DC - International Ice Patrol evaluation of mini-satellite tracked drifting buoys; selection of satellite tracked drifting buoys for operational SAR case DMB evaluation in D14 during FY91; participation in the CASP correction and improvement efforts; and hosting a working group on Comprehensive SAR.

For FY91 the following efforts are planned: additional NVG testing in Block Island Sound

(fall) and Fort Pierce (spring); initial FLIR evaluations (spring); initial AN/APS-137 FLAR evaluations with IIP (summer); joint Canadian-US heavy weather visual and electronic search evaluations using 210-ft WMECs from both countries (late fall); D14 drifting buoy evaluation; and investigating how environmental data accessed by CASP can be improved; establishing a satellite imagery derived surface current capability for SAR; and continuing the development of self-locating DMB technology. ∞

CASP Update



By: CDR Steve R. Osmer, (G-NRS-1)

A third CASP coordination meeting was held on 27 August 1990 at CG Headquarters. Representatives from Commandant (G-NRS), Operations Computer Center (OCC), International Ice Patrol (IIP), CG Academy (CGA), R&D Center (R&DC), National SAR School (NSS), interested CGHQ personnel, and the new members of the Martinsburg OCC responsible for CASP were present. LCDR Richard D. Kassler, from the Academy's Department of Science, reported on his summer's research into the use of the regional sea current files by CASP. The status of the CASP effort was reviewed and the initial FY91 efforts on CASP were agreed upon.

LCDR Kassler in his report, Use of Regional Sea Current Files by CASP, though he concluded that CASP correctly draws upon the proper file and that the information is correctly used, found problems with the World Historical file and the Florida Current (FLDA) file. LCDR Kassler proposed several changes to CASP which are now under review by IIP and the R&DC staffs. If they concur, we will submit CASP software change request(s) to the OCC. Among the changes he proposed are:

(1) World Historical File - rebuild to accurately reflect the Gulf Stream and eliminate other data discrepancies.

(2) FLDA File - discontinue north of 28N.

(3) FLDA File - correct the remainder of the file to match accepted scientifically collected data (i.e. Richardson).

(4) Gulf Stream File - replace with FNOC's regional Gulf Stream product.

The following summarizes the meeting and the work planned during FY91:

All action items but one recommended for FY90 by the CASP Working Group's Nov 89 report have been completed or have had major progress. Among the accomplishments during FY90 were the

locating and correcting of the most significant software errors, conducting the functionality testing, and verifying the use of the environmental data files. The one action item remaining is to follow through with Fleet Numerical Oceanography Center (FNOC) and NOAA to identify the improved environmental data desired for CASP; IIP has initiated the liaison.

Due to the increasing workload at the OCC resulting from the impending move to Martinsburg and work on the other computer systems, their role will essentially be reduced to one of support and advisory for R&DC, IIP, CGA, and NSS.

IIP will undertake to validate the FNOC Regional Gulf Stream model. This product would replace the existing weekly data IIP now supplies to CASP. IIP will also continue their liaison with FNOC and NOAA to finalize the new data delivery formats and the resolution desired for expanding the CASP on line data base to worldwide coverage.

For FY91 the R&DC's Improvement of Search and Rescue Capabilities (ISARC) staff will be working on constraining the amount of environmental data that the opcens now have to load when they run CASP, will assist IIP with the worldwide and higher resolution data investigations, and research the second order statistics for CASP. Their planned work on CASP is included under the project's Improved POD Modeling element.

CGA's Department of Science intends to collaborate with IIP on the FNOC Gulf Stream model validation.

LCDR Gerry Donohoe from NSS presented their outline and technical performance objectives for the CASP instruction. The CASP instruction will commence with the October 1990 MRCC class.

NRS will assist with the environmental data liaison and continue investigating other models that might have value for incorporation into CASP as modules.

PacArea (Poc) has agreed to rewrite the CASP user manual; they have established a tentative completion date of Dec 90.

All opcens have been requested to provide copies of their SAR planning and datum determination programs. Our intent is to review them and maybe find one for CG-wide application. Seven opcens have responded so far.

The second draft of the CASP Functionality Requirements was handed out for review. The SAR Program would like to get this document signed by the end of the calendar year.

The SAR Program has received great support for CASP from these individuals and their units. oe

The 41' UTB Preventative Maintenance System

By: LT Wes Driver, (G-NRS-2)

The Preventative Maintenance System (PMS) for the UTB is designed to identify and correct discrepancies before they cause catastrophic casualties. Tech Pub 2061 provides guidance for the minimum PMS to be performed on UTB's. Most units perform the cyclical PMS in a professional manner, accomplishing the task as required. However, there are a few problem areas including:

A recent review of many units PMS system indicated they are not properly completing the daily PMS (D-1-A), even though the weekly PMS Feed Back Report shows its completion. PMS No. D-1-A should be included in the daily boat check sheets used by the unit.

The inspection of Dry Chemical Extinguishers (PMS No. M-12-D), is often misunderstood. The Dry Chemical extinguisher relies on the CO2 cartridge to propel the PKP. If this cartridge is not fully charged the extinguisher will not work properly. It is extremely important that the CO2 cartridge be removed and weighed separately. If your unit does not have an ounce scale, ask the Post Office to weight it for you until you can purchase one.

A common problem in completing the PMS is complacency. People doing the PMS service often "ASSUME" they know the proper way to perform the servicing and do not take the time to read the service card. The results of maintenance being done can be less than desired.

To combat the problem, a suggested PMS organization would be to divide the work among all engineers attached. Rotate the PMS items so that no one engineer would inspect the same items. This will provide two immediate benefits; 1) broaden the knowledge of all engineers assigned and 2) different viewpoints from various inspectors will provide an objective inspection of PMS items. ops

SYSTEM	COMPONENT	PMS No.
41' UTB	Various	D-1-A
SUB SYSTEM	RELATED PMS	APPLICABLE TO
Propulsion and Auxiliary		41' UTB
DESCRIPTION		FREQUENCY
Daily Routine		Daily

SAFETY PRECAUTIONS

1. Observe standard safety precautions.

TOOLS, PARTS, MATERIALS, TEST EQUIPMENT

1. Flashlight
2. Rags
3. Hand tools

PROCEDURE

Operate No. 1 and No. 2 Main Engines

1. Check engine coolant level. Expansion tank level should be within 1" to 2" of the top at all times.
2. Check engine lubricating oil level. Add enough 9250 oil to bring the lubricating oil level to the upper mark on the dipstick.
3. Turn the "t" handle on top of the fuel filter 1-1/2 turns per day, or 2 full turns if the boat is underway for a full day.
4. Check marine gear lubricating oil level.

NOTE: 1. Oil level should indicate just above full mark.
2. See step 13 when addition of oil is necessary.

5. Check the main engine starting batteries' electrolyte level. Add enough clean distilled water as necessary to keep the electrolyte level at least 3/8" above the separators.
6. Check the operation of the hot starts by noting the jacket water temperature. The jacket water temp. should be between 80°F and 120°F.
7. Examine all external moving parts on the engines to see that they are clear for running.

AMENDMENT 5 page 1 of 4

First page of the daily Preventative Maintenance System for Utility Boats as required by T.P. 2061

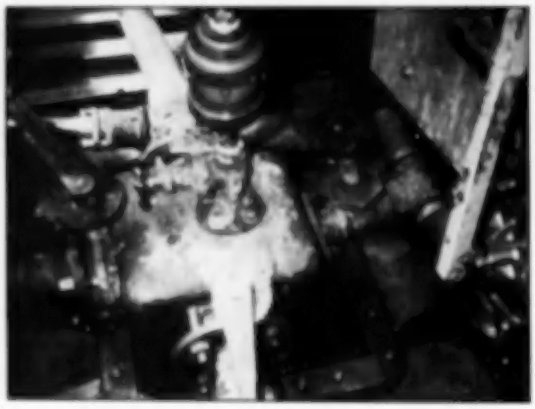
Care & Maintenance of The 41' UTB Hull

By: LT Wes Driver, (G-NRS-2)

Many problems with hull maintenance of UTB's have been discovered. We must take action to correct these discrepancies so that our UTBs will continue providing the high level of service we demand.

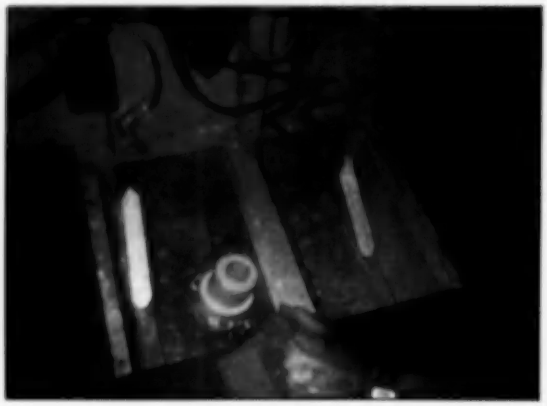
The loss of organotin bottom paint without a suitable replacement continues to cause units additional maintenance work. There is only one system approved for service wide application, this is the Mare Island Epoxy System. Other systems are being tested with mixed results. As soon as a suitable system is identified and approved by the EPA it will be adopted for Coast Guard use. Until that time, we must continue to haul boats out more often to keep the bottoms clean.

The identification of cracks in the welds which connect the longitudinal and frames continues to cause concern among many commands. There is little correlation between these cracks and the installation on Boat Alt. 45 (structural reinforcement to the hull). To be safe, check the welds at frames 3 thru 6 at least quarterly. To reduce the chance of cracks and lessen the degree of damage; *SLOW DOWN, DON'T POUND!*



Sea chest area with valves corroded. Recirculation lines removed and bilges heavily pitted by lack of housekeeping.

CORROSION is our largest problem with hull maintenance. Corrosion attacks frequently in areas that receive the least attention. The worse area tends to be just forward of Bulkhead 6 at the center vertical keel. During a recent boat inspection a battery was found buried in over 2 inches of dirt and salt. Because of the difficultly in accessing this area, it has a tendency to gather trash. This area must be inspected and cleaned AT LEAST monthly. Other areas prone to corrosion include the forepeak and engineroom. Although engine oil is a lubricant and non-corrosive, it becomes acidic after 20 hours in the engine. If oil is permitted to remain in bilges, the destructive results can require major hull replacement after a short time. Nuts, bolts, dirt and trash can be equally offensive. Dissimilar metals create their own electrical current, causing instant metal deterioration. Efforts must be made to keep tools and trash out of the bilges.



Bulkhead 6 showing corrosion and lack of maintenance.

Serious as corrosion is, one common treatment was found to be as damaging as the corrosion itself. The use of a chemical abrasive actually removes a fine layer of aluminum. Use of such cleaners will slowly wear down the aluminum reducing its strength. When natural oxidation occurs, a dull finish appears, this provides protection to the metal.

UTB fore peak

The key to effective hull maintenance is "Good Housekeeping". Take time to clean the hull... use only biodegradable detergents, and stainless steel hardware. If the above steps are taken, life of the hull will increase and long term major maintenance will be minimized or avoided entirely. os

Does Your High Temperature Water Alarm Sensor Work?

By EM2 Joan Murray, UTB Systems Center, RTC Yorktown

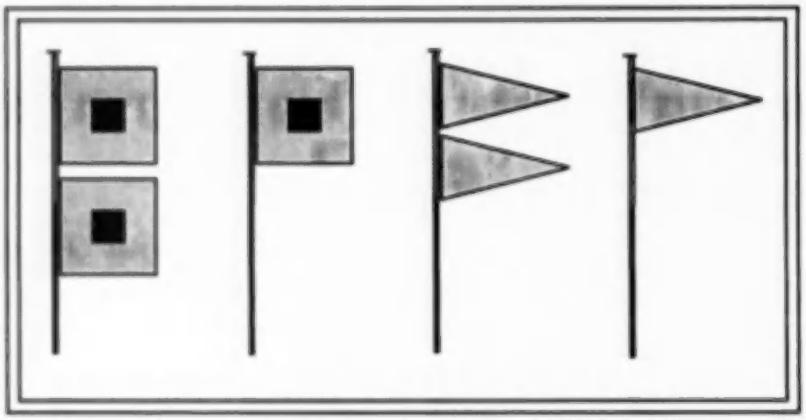
We had an interesting muffler fire the other morning. To make a long story short; the boat was running 2200 RPM when the coxswain noticed the water temperature was 235° F. The proper corrective measures were taken (etc.) and the boat brought home. While everyone was at lunch, the MK1 noticed major smoke coming from the exhaust port. The muffler was cooled with water and replaced.

Cause : The raw water impeller lost it's last blade and the high water temperature switches never set off the alarm.

Moral : Make sure high temperature water alarms are tested every quarter. To test them disconnect the wires, pull the switch out, put a plug in the hole, and test the switches outside the boat. Then test the alarm circuits. To check : with the engines running touch the two wires together. You should get a light and a bell. Check that the cutout switch will turn off alarms to only that engine. If not, the wiring needs to be corrected in the alarm relay panel. If you need more information on this call me. FTS 827-2254 or COMM (804) 898-2311/2254. os

Where Are Coastal Warning Flags?

By: LCDR F. L. Bradham, (G-NRS-1)



The National Weather Service (NWS) officially retired the Coastal Warning Display system on February 1, 1989. This retirement was due to the NWS effort to deemphasize the use of flags in favor of the National Oceanographic and Atmospheric Administration (NOAA) Weather Radio which now covers the U. S. coastal areas with continuous broadcasts.

We have learned that the display of coastal warning flags by some Coast Guard stations has become part of the local tradition and is a visible sign of our commitment to maritime safety. For that reason a few stations have continued the flag display tradition. Coast Guard Commandant Notice 3000 of 01 February 1989 authorized District Commanders to designate which of their stations, if any, should continue to display warning flags.

A recent survey of all Coast Guard districts determined that only three districts have stations displaying warning flags. Flags are no longer available through the NWS and the amount of use does not justify Coast Guard service-wide purchasing and distribution. Therefore, stations must now purchase Coastal Warning Flags from local vendors. The Thirteenth District has the most stations using warning flags and is purchasing them from an upholstery firm in Oregon. Units interested in purchasing these flags may contact the Senior Controller, CCGD Thirteenth at FTS-399-5880. ☙

Station Staffing – How do you compare to the standards?

By: LT Rich Schaefer & LCDR Frank Bradham (G-NRS-1)

Currently the staffing of Coast Guard stations is based on the standards contained in COMDTINST M5312.11(series), Staffing Standards Manual. The following are the standard staffing levels derived from the manual for a basic station only. Additional missions, support personnel, high-threat law enforcement, or SARDETs attached, would affect the entire mix of personnel.

This should give you a rough idea of how your unit is situated in comparison to the standard. Keep in mind that these standards are primarily guidance and the particular situation of a station may affect the actual staffing. One situation that occurs in several places is the co-location with a group office. In that situation the group normally provides the communications watchstanding for the station. Also additional engineering support is often available and may remove the requirement for a designated engineering petty officer billet.

Boat Mix*	1 B0 Boat	41	41	41	44	44	44
	2 B0 Boats		41	41		44	44
	3 B0 Boats			41			44
	# Duty Standers	19	32	44	24	42	58
Command & Control Billets	CO/OINC:	BMC	CWO	LT	BMC	LT	LCDR
	XO/XPO:	BM1	BMC	BMC	BM1	BMC	LTJG
	STAFF:						CWO
	STAFF:						BMC
	EPO**:	MK1	MK1	MKC	MK1	MKC	MKC
Duty Standers Billets	BM1:	0	2	3	0	3	4
	BM2:	3	4	5	4	5	6
	BM3:	3	5	7	4	7	8
	SN/SA:	6	10	12	8	11	16
	**MK1:	1	1	2	1	2	4
	MK2:	2	3	4	2	4	6
	MK3:	2	4	7	3	6	8
	FN/FA:	2	3	4	2	4	6
Support Billets	SS1:		1	1		1	1
	SS2:	1		1	1	1	1
	SS3:		1	1		1	2
	MESS COOKS:	0	1	2	1	1	2
TOTAL BILLETS:		23	38	52	29	49	69

*For stations with mixed boats, both 44s and 41s, use billets assigned for number of B0 boats for 44s. Minimum crews used in calculations, 3 for 41, 4 for 44.

**MK1 EPO assigned as additional billet where number and type of boats, multiple B0 posture, special missions etc. If assigned, MK1 in standard billet listing changed to additional MK2.

A single SARDET can add as many as 10 dutystanders and as few as zero, depending on the boat assigned for the SARDET and length of season it is activated. Similar ranges in added dutystanders are possible when additional B-0 boats are assigned to a station for part of the year.

The question of tasking small boat stations is now being reviewed by Headquarters. During the next two years a multiprogram study group will define the mission tasking expectations of stations, the workload created by these missions and the staffing necessary to accomplish them. It is anticipated this study will adequately identify station "job descriptions" and then by using accepted staffing manpower methodologies, produce criteria which Headquarters and operational commanders can use to match manpower with operational need. os

FY-91 Class Schedule For National SAR School

By: LT Rich Schaefer, (G-NRS-1)
SAR Quota Manager

The schedule for FY-91 classes has been published in COMDTINST 1540.6M, FY91 Coast Guard Formal Training Schedule. SAR program courses are listed on pages 13 and 14. We have already made a change to that schedule to spread out the offerings of each course. The course dates listed here are the ones you should consider when submitting your requests for these courses. The list also shows the number of remaining seats in each class for Coast Guard students as of 30 SEP 90. There are 20 seats available in each class. For each MRCC class, five seats have been reserved for international students, five for DOD students, and two for Coast Guard Reserves. For each Group class, five seats have been reserved for international students and one for Coast Guard Reserves.

Maritime RCC Controller Course (MRCC-SAR (CG-060))

Class start dates	*CG seats remaining*
15 OCT 90	1
10 DEC 90	8
01 APR 91	8
13 MAY 91	8
09 SEP 91	8

Group SAR Course (GRP-SAR (CG-062))

Class start dates	*CG seats remaining*
01 OCT 90	0
26 NOV 90	0
07 JAN 91	7
04 FEB 91	12
11 MAR 91	12
22 APR 91	14
03 JUN 91	14
08 JUL 91	12
29 JUL 91	14

As class lists are finalized, any unused seats by DOD, International, CG Reserves, or Coast Guard are then open to be filled by the others.

As in FY-90, the available quotas are programmed for SAR Planners. Currently no formal resident training exists for pilots, shipboard personnel, or coxswains. Persons in these billets are encouraged to enroll in one of the CG Institute courses, either Search and Rescue (409) or SAR Fundamentals (431). CO/OINC/XO/XPOs of stations are encouraged to submit short term training requests for attendance in the Group SAR course. With an additional convening this year we should be able to fit more of these second priority people in. os

Shoulder Line Throwing Gun Ammunition

By: Defense Operations Division, Capabilities Branch (G-ODO-2)

The limited availability of .30 Cal M3 rifle grenade ammunition has increasingly been a problem. An extensive research, testing and evaluation program to identify a suitable replacement has been completed. Some of the options evaluated included:

(a) resurrecting the technical package for the M3 cartridge;

(b) inserting 7.62MM chamber sleeve in the existing guns;

(c) manufacturing a new barrel with 7.62MM chamber to fit existing guns; and

(d) using the M14 with specially remanufactured projectile and shotline.

Options were tested by the Weapons Department of Naval Weapons Support Center Crane, IN. The results of all options were reviewed with the affected facility and program managers. The following option was selected:

The current Shoulder Line Throwing Gun (SLTG) and all associated support equipment, projectiles, line, etc. shall continue to be used. The ammunition will be changed to 7.62MM M64 rifle grenade cartridge.

Tests show that with current operation and maintenance policies, this option poses no threat to the safety of the gunner or risk of damage to the SLTG. Excessive pressures are not generated, but there is a slight decrease in range. The fired 7.62MM cartridge neck merely conforms to the longer chamber of the .30 Cal. without demonstrating any problems with loading, extraction and/or ejection. Selecting this option requires no additional funding.

Action is as follows:

Commandant (G-ODO) shall:

(1) Budget for and procure 7.62MM M64 (G839) rifle grenade cartridges in adequate supply to support the Coast Guard's SLTG requirements for operations and quarterly training.

(2) Establish appropriate Non-Combat Expenditure Allocations (NCEA) for 7.62MM M64 (G839) rifle grenade cartridges for appropriate units. (FY91 NCEA letters will include the allocation.)

NCEA claimants shall:

(1) Forward this policy to all appropriate units.

(2) Requisition 7.62MM M64 (G839) rifle grenade cartridges as required.

(3) Ensure all .30 Cal M3 rifle grenade cartridges are expended first.

(4) Ensure all policies, safety precautions and maintenance procedures per Small Arms Manual COMDTINST M8370.11 (series) are strictly followed.

Operational units shall:

(1) Expend all .30 Cal M3 rifle grenade cartridges first to meet training and operational requirements.

(2) Conduct quarterly training per Small Arms Manual COMDTINST M8370.11 (series).

(3) Strictly follow all policies, safety precaution and maintenance procedures per Small Arms Manual COMDTINST M8370.11 (series).

Line throwing equipment can be vital in many operational evolutions. The equipment must be properly maintained and adequate numbers of personnel trained to ensure effective safe use of the equipment. Units should evaluate operations and determine the best equipment, the SLTG and/or the MK87 Line Throwing Adapter Kit (LTAK) for the M16. Training in operation and maintenance procedures must be given a high priority; the minimum is quarterly on the equipment the unit has onboard (the SLTG, the LTAK or both).

This policy is effective immediately and will be published in the next change to the Small Arms Manual COMDTINST M8370.11 (series). Should additional information be needed, our point of contact is CWO T. E. Holub. He can be reached at FTS 267-2039, Com. (202)267-2039. os

Sweep Width And The Search Plan

By: QMC Dave Ginsburg, National SAR School

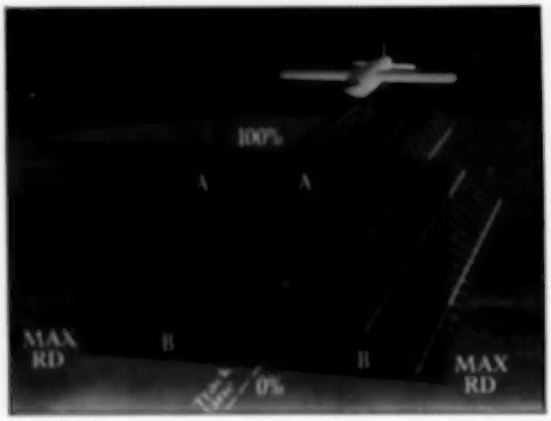
"Sweepers sweepers man your brooms!" is part of every ship's daily routine. Calculating sweep width should be part of every SAR planners routine. Accurate determination of sweep width is the key to evaluating the effectiveness of your search plan.

The National SAR Manual states that "Sweep width is the distance on both sides of the SRU where probability of detecting a target outside of the sweep width is equal to the probability of missing a target inside that distance. It is a measure of detection capability based on target characteristics, weather, and other factors". What this means to the planner is that sweep width is the optimal distance at which you should be searching based on all constraints, i.e., search objects, meteorological conditions, and the SRU and crew.

The illustration in ***Figure 1*** is a three dimensional variation of the sweep width graphic located in the National SAR Manual Vol. I, page 5-19 (01 Nov 86 edition). If the corrected sweep width for the SRU is 3.0 nautical miles, then the scanners will be most effective when searching 1.5 nautical miles either side of the platform.

Remember that this corrected sweep width means that you have considered:

(a) target characteristic
(b) meteorological visibility
(c) terrain/sea conditions
(d) cloud cover
(e) search speed
(g) visual distress signaling devices
(h) position of the sun
(i) fatigue



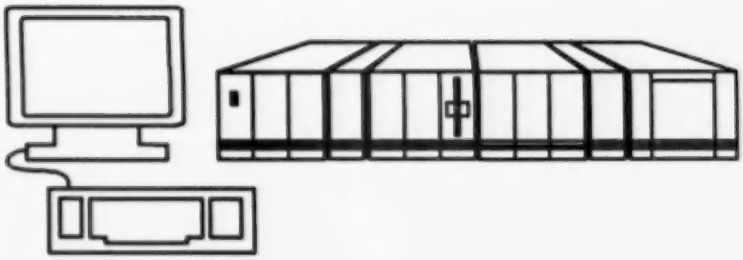
(Figure 1)

As a search planner or searcher you must know and understand what the corrected sweep width is for every search object. If you cannot answer the question; "What is the sweep width for this search?", you will not be able to gauge the effectiveness of that search.

Remember, correct sweep width calculations are an important part of effective search planning. It is the ONLY way to know if you and the searchers have looked at the entire search area. ⚓

SAR Data and You

By: LTJG Patrick Geddes, (G-NRS-1)



Many people may wonder what happens to the SAR case data that is entered into their Search and Rescue Management Information System/Data Entry Sub-System, (SARMIS/DES also known as just plain SARMIS). The most obvious use of these numbers is the publication of the annual SAR Statistics, but the SAR data works for the Coast Guard in many other ways.

At the unit level there is not a great deal of access to SAR data through SARMIS, but there are a few reports available. The SAR Unit Report will print out a unit's data for an individual case, and the SAR District Report (which is no longer required in most districts) gives the same information in a different format. To get totaled statistics, there is a SAR Monthly Summary and a SAR Monthly Report sorted by the name of the assisted vessel. Bear in mind, however, that your unit's SARMIS computer can only total the data your unit has entered. This means that your totals of lives saved and property saved will not include Multi-Unit Case data, unless your unit was SMC for that case. To get these numbers, contact your district or G-NRS-1. If you have suggestions for SARMIS, such as reports desired, reports used often, or reports never used, please contact us!

Several units have asked for a report listing completed case numbers. This will be seriously considered for the next release of SARMIS data entry software. In the meantime, the best way to find out what report numbers are missing is a list generated when the option TRANSFER SARMIS DATA TO DISKETTE FOR MAILING is selected. (This option is now the only acceptable way to send data to the district and area offices.) A list is automatically sent to the SARMIS default printer of all cases within the range selected that are missing. These cases are either incomplete or just missing.

At the district level, there is a much greater access to SAR data. Each district and area Search and Rescue office has received the software and training to compile and use a database of their own district or area SAR data. This database, the SARMIS District Sub System, is known affectionately as DSS by those of us acquainted with it. It allows district and area coordinators to read data directly from a unit's SARMIS diskette and then immediately run reports and queries on that data and any other data already entered. One advantage of this database is that it gives users access to ALL data entered into each unit's SARMIS (with the exception of information about the owners of the vessels assisted), some of which is not available on the Headquarters database. Because the DSS includes a function called Ad-hoc Query, users have the tools to create an almost endless number of reports in addition to the canned reports provided by DSS. We realize, however, that most districts and areas will require the expertise of Headquarters and EECEN user support to do these custom queries.

At Headquarters we maintain the master SAR database on the Department of Transportation's mainframe computer. This database is fed by data

uploaded from each district and area office. We keep ten complete years of data on-line, and we employ a statistician who can work magic on the numbers to answer questions on any combination of the data fields on the database. We also have the capability of displaying the distribution of these SAR cases on digitized charts. Headquarters SAR data is used by a wide variety people and agencies. It is often used by headquarters and district offices in examining where boats and cutters could be most useful. Numerous studies inside and outside the Coast Guard use the data to find out how often certain circumstances occur and to examine trends over the years. The outcomes of some of these studies can often affect survival equipment requirements of military and commercial vessels and aircraft, both nationally and internationally. There are also miscellaneous requests from the public ranging from national nightly news reporters to inquiries by Congressional, state, and local officials.

Beyond publishing SAR Statistics you can see that SAR data serves many purposes, but what we can get out of our data is only as good as what is put in: remember, "Garbage in, garbage out." This means that the units who create the SARMIS reports are the most important part of the entire data system. If there are any suggestions for SARMIS or any problems with the software, the point of contact is LTJG Geddes or LT Godfrey at FTS 267-1089 (commercial (202) 267-1089) in G-NRS. The point of contact for SAR data requests from Headquarters is Ms. Holden at FTS 267-1054 (commercial (202) 267-1054). os

SARMIS HINTS

When you get the screen asking for the Assistance Request Number, also called the unit case number, you will notice that SARMIS fills a number in automatically. This is the next sequential case number. This number may not be the number of the report you are doing. If it isn't, just enter the correct number. If you mess this up, you will really confuse a lot of people, especially when doing Multi-Unit Cases.

If property was lost on a case, the actual severity should be "Severe" (code 3). SARMIS will allow you to enter an actual severity of "Moderate" (code 2) and still claim property lost, but this will cause an error when the district or area data coordinator tries to load the case onto the Headquarters computer. The coordinators will probably change the severity to 3 anyway, so you can save them some work by entering severity 3 if property was lost.

Distinguished SAR Controller Award: An idea long overdue

By: LT Rich Schaefer, (G-NRS-1)

What do you think? Is it about time the SAR community recognizes the outstanding efforts of SAR planners?

Anyone who has been a SAR controller can tell you the tale of that one case where they really felt as though the odds were severely stacked against them. The facts were so few, the leads fewer, and the resources inadequate. No matter what they would do they knew prosecuting this case was going to be difficult if not impossible. In the end, through their diligence and hard work, facts and leads were put together. They then mustered the needed resources and formulated the plan to resolve the case. Some will tell you of the many lives and big bucks in property saved, others will tell you how only the deceased and debris were located. In either case, it was amazing how they were able to piece it together and use the appropriate search parameters to put that case to rest.

In an idea recently presented by Chief Ginsburg, an instructor at the National SAR School, we would honor SAR controllers who have excelled in the field of search and rescue planning. Perhaps through a Distinguished SAR Controller Award, presented annually to the controller or controllers (and/or assistant(s)) who distinguished themselves by their ingenuity, tenacity and zeal in prosecuting a successful SAR case.

Like the Jarvis and Munro awards, units would submit names of candidates, along with a brief summary of the circumstances supporting the award. Recipients would receive an appropriate award hallmarking their professionalism. The National SAR School could maintain a plaque displaying the recipients names. Case summaries for winners and runners-up would be published here in On Scene.

We welcome your comments on the establishing of such an award. Some things we may want to consider for comment are:

- **Who should be eligible for the award? Coast Guard (RCC only or group planners as well)? DOD? International?**
- **Several awards for separate categories?**
- **What kind of award? Certificate, plaque, trophy, or ...?**
- **Who should be on the panel to make the selections?**
- **When and where should the award presentation be made?**

We would like to thank Chief Ginsburg for submitting this idea. With your input we hope to provide some long overdue recognition for SAR planners. If you have comments you may submit them to me, LT Rich Schaefer. My phone number is (202)267-1559 or FTS 267-1559, or drop me a note in the mail (via COMDT G-NRS-1) or electronic mail (R.Schaefer/G-NRS). os

EMT (Emergency Medical Technician) Certification & Recertification

By: CWO4 H. D. Jones
EMT Program Manager, (G-OAV-3)

Commencing 1 October 90, the EMT National Registry will be used as the certification standard for all Coast Guard EMT's. All CG EMT's who are not EMT National Registry certified are instructed to seek National Registry Certification before their current state certification expires or NLT 1 OCT 92.

Certification

The CG EMT School at TRACEN Petaluma was certified by the EMT National Registry in September 88. As of 1 July 90, all graduating classes are administered the EMT National Registry Certification Exam.

All members receiving orders to attend the CG EMT School at TRACEN Petaluma for a recertification course will be given the opportunity to apply for EMT National Registry Certification and take the written exam upon completion of the course.

All MLC's, Districts, Groups, and Unit Training Officers involved in contracting local training are directed to have EMT National Registry Certification testing included in the contract with the training facility for all classes with class convening dates after 1 OCT 90. The training facility must make the arrangements with the EMT National Registry and reflect the cost in the initial and final written contract proposed.

Recertification

EMT National Registry recertification is required every two years. The following qualifications are required for recertification:

(A) Be actively working within one of the following areas during the two (2) year certification period: Emergency ambulance service, rescue service, patient health care setting, police/fire service or armed forces search and rescue operations.

(B) Annual CPR certification.

(C) Complete 2 hours of continuing education each month for a total of 48 hours by the end of the two (2) year certification period.

(D) Complete a DOT state approved national standard EMT basic refresher course, with written and/or practical examinations. You must obtain a course completion certificate or letter from the training facility to verify attendance. Examples of training facilities are: The CGEMT School Refresher Course at TRACEN Petaluma, any DOD military hospital or health care facility, any state, county, or city fire department refresher course. You must complete the refresher course prior to the expiration date of your certification. At this time all EMT National Registry Certifications expire on 31 December.

(E) The National Registry will mail you a reminder, with forms, in October prior to your 31 December expiration date. You must complete the Recertification and Continuing Education Report, attach the proper verification as stated, or required and return the package to the EMT National Registry Office no later than 31 March of the year following your expiration date. The National Registry fee for recertification is $10.00. You must include specific instructions in your recertification package to the National Registry to charge the fee to the CG Training Center Petaluma EMT School BPA. Your package will be returned to you for the fee if you do not make this clear, thereby delaying your recertification.

Continuing Education

Any subject covered in the National Standard EMT Course will be accepted for continuing education credit. Subjects may vary depending on the job task of the organization where the course is given; i.e. fire department, hospital, boat station, etc. Continuing education may be presented utilizing various formats, some as outlined below.

Critiques -- Present an interesting medevac case to the other EMTs at your unit, or to the entire unit and document the date and number in attendance.

Diadactic Sessions -- Systematic classroom instruction by lecture in conjunction with human subjects or patients for visualization of the anatomy or pathology being discussed.

Video Reviews -- The CG EMT School Petaluma has a catalog of EMT videos for loan to individuals or units. There is also commercial companies offering video and printed Continuing Medical Education (CME) subscription service.

Practical Drills -- Simulation of accidents and injuries and the actual practicing of the treatment procedures.

Workshops or Seminars -- The recommended method to accumulate continuing education hours or credits is outlined above. However, members may also collect a large number of continuing education hours by attending an EMT conference, workshop, or seminar at any time during the two (2) year certification period. The majority of them cover weekends and the member may choose the number of days to attend. All accredited hospitals, medical centers, and clinics, both government and civilian, are required to have weekly, monthly, or quarterly in house continuing education programs which you may make request to attend. The contact for allied health continuing education is usually found in the nursing service, education service, personnel service, or medical administration offices of the listed facilities.

Points of contact: COMDT (G-OAV-3) CWO Jones, FTS 267-0952, COMM (202) 267-0952 or COMDT (G-KOM) CWO Hersberger, FTS 267-0748, COMM (202) 267-0748. os

Cold Water Recovery

By: LT W. A. Mullenburg, D13 Operations Center

On 22 March 1990, Coast Guard District Thirteen participated in a joint U.S. Coast Guard/Canadian Coast Guard/U.S. Navy search and rescue exercise (SAREX) in the Strait of Juan de Fuca between Port Angeles, Washington and Victoria, B.C., Canada. The objectives of the exercise were threefold: (1) to coordinate a multi-unit search out of Group Port Angeles, specifically assessing communications equipment and capabilities; (2) to familiarize participants with the characteristics of search and rescue units from other agencies; (3) to practice and videotape hoists and transfers of personnel to and from vessels of other agencies. Planning and coordinating the exercise took over two months.

Of particular note was our exposure to Canada's "parbuckling" method of hoisting a potentially hypothermic individual from the water. One of the exercise objectives was to observe the procedure and evaluate the feasibility of this hoist method. The method involves placing straps under and around a horizontally floating victim, then "rolling" the victim

up the pontoon of a rigid-hull inflatable boat. The Canadian Coast Guard sometimes uses this method in calm waters if the victim has been in cold water for a relatively long period of time; in theory, the shock of a vertical hoist (caused by the sudden decrease in water pressure around the core of the body) will be more damaging to the victim than the few extra minutes it takes to hoist horizontally. The threat of cardiac arrest in a vertical hoist of hypothermic victims is very real.

Without a rescue swimmer, this method of hoisting is impractical for any boat except an RHI and must be measured against the need to recover a greater number of victims in a limited time. Horizontal lifting may be used by any boat which is able to put a swimmer in the water and conduct the lift with a litter. The Coast Guard does this routinely, but Search and Rescue Units (SRUs) need some guidelines. I propose the following procedures for cold water recoveries:

1. If a person is known to have been in cold water for over ninety minutes the SRU should put a swimmer and litter in the water. In practical terms, this would mean a second helo or second sortie should be equipped and assigned to conduct horizontal lift. If the SRU expects an ETA of ninety minutes or more, it should take the few extra minutes to prepare for a horizontal lift.

2. Once on scene, if the victim is unable to ready themself for the lift, the SRU should assume the victim is in shock and conduct a horizontal lift. For helo hoists, the rescue swimmer would prepare the victim for a litter hoist rather than a horse collar or basket hoist. For boat recovery, a swimmer in the water should prepare the victim for a litter hoist rather than the typical method of running a line under the arms and pulling the survivor aboard in a vertical position.

3. Gentle handling is paramount with potentially hypothermic victims! SRU crews should make every effort to roll the victim as smoothly as possible up the pontoon of the boat, if that is the method being used.

These guidelines are simple and can be followed without the additional onboard expertise of a corpsman or EMT. By following these procedures, we may be able to prevent shock-induced post-rescue death in those situations where immediate rescue is not possible because of (A) prolonged elapsed time prior to notification of incident or (B) delayed arrival on scene due to waiting for a first light search, enroute time, or search time.

The Canadians and the English have done in-depth studies on vertical versus horizontal lifts and have incorporated that knowledge into their rescue procedures. Here in the Northwest, the Port Angeles Pilot's Association retrofitted their pilot boats two years ago to perform horizontal lift recovery of a pilot who was overboard.

There are lessons to be learned and, if appropriate, incorporated into our standard rescue procedures. Headquarters level review of this recovery method is recommended to fully evaluate its strengths and weaknesses. os

Editors note: Gentle handling of hypothermic victims is the most important part of water recovery. While the litter recovery method is being taught by Coast Guard EMT school, we want to emphasize that this is a difficult evolution and should only be performed by trained personnel in calm water. NEVER use a Rescue Sling (Horse Collar) for retrieval of hypothermic victims.

Search & Rescue Division (G-NRS)

TELEPHONE: FTS 267-XXXX COMM (202) 267-XXXX FAX 267-1057

			E-MAIL
Division Chief	CAPT D. R. Freezer	1551	NRS/G-NRS
Asst Chief	CDR H. G. Ketchen	1085	NRSa/G-NRS
Secretary	Ms. W. M. Foster	1948	W.FOSTER/G-NRS
Secretary	Ms. T. L. Stevenson	1896	T.STEVENSON/G-NRS
Secretary	Ms. M. V. Murrell	1943	M. MURRELL/G-NRS

G-NRS-1: PROGRAM BRANCH

Branch Chief, R&D Liaison, Area Liaison	CDR S. R. Osmer	1581	NRS-1/G-NRS
Maritime Asst. Policy, D11, 13, 17, & Groups Liaison / Mgr.	LCDR M. J. Lewandowski	1589	M.LEWANDOWSKI/G-NRS
SAR Addendum, Station Staffing, D5, 7, 14 & Groups Liaison / Mgr.	LCDR F. L. Bradham	2275	F.BRADHAM/G-NRS
SAR School, SAR Manual, D1, 2, 8, 9 & Groups Liaison / Mgr.	LT R. R. Schaefer	1559	S.SCHAEFER/G-NRS
Budget Coordinator, Planing Analyst	Mrs. P. M. Batt	2869	P.BATT/G-NRS
SAR ADP / IRM Systems Coordinator	LT S. R. Godfrey	1579	S.GODFREY/G-NRS
SAR Statistics, Data Analyst, Computer System Mgr.	Ms. S. M. Holden	1054	S.HOLDEN/G-NRS
SARMIS, E-MAIL, SAR Data Coordinator	LTJG P. H. Geddes	1089	P.GEDDES/G-NRS
SAR Facilities Database	ENS A. S. Leath	1586	A.LEATH/G-NRS

G-NRS-2: FACILITIES BRANCH

Branch Chief	CDR J. R. McGuiness Jr.	1592	NRS-2/G-NRS
Asst. Branch Chief, Resource Mgr. D9	LCDR D. F. Breuninger	1591	D.BREUNINGER/G-NRS
Resource Mgr. D11/13/14/17, 47' MLB, 30' SRB, 44' MLB, NMLBS	LCDR M. A. Monteith	1584	M.MONTEITH/G-NRS
Resource Mgr. D1, 5, 7, 8, 41' UTB Sys 41' STAN TEAM	LT W. E. Driver	1590	W.DRIVER/G-NRS
ON SCENE Mag, Non Standard Boats	ENS K. N. Schilling	1876	K.SCHILLING/G-NRS
Boat Crew Professionalism, Training Manuals, Qualification Guides	CWO J. P. Miller	2868	J.MILLER/G-NRS
Rescue & Survival Systems Mgr.	CWO M. O. Hyde	1585	M.HYDE/G-NRS

G-NRS-3: COORDINATION BRANCH

Branch Chief	Mr. D. E. Lemon	1582	NRS-3/G-NRS
AMVER	Mr. J. D. Lombard	1552	J.LOMBARD/G-NRS
SARSAT	LCDR P. L. Barger	1580	P.BARGER/G-NRS

AMVER MARITIME RELATIONS SECTION, Governors Island, New York

Section Chief	Mr. R. T. Kenney	FTS 664-7764	R.KENNEY/G-NRS(AMR)
AMVER Bulletin	PA1 B. K. Terrill	FTS 664-7764	B.TERRILL/G-NRS
AMR Supplies	PA2 D. Uhlenhopp	FTS 664-7764	D.UHLENHOPP/G-NRS
Administrative Asst.	Ms. E. R. Mercado	FTS 664-7764	E.MERCADO/G-NRS

The Incidence of POST-TRAUMATIC STRESS DISORDER In SAR Personnel

By: LT Philip C. Tundel, CHC, USNR, RTC Yorktown

INTRODUCTION

Most people in the SAR community believe their primary mission is search and rescue. They train, equip, and prepare for the time when they are called upon to save a life. However, this article concerns itself with the "dark side" of the SAR mission. This "dark side" is when SAR personnel are called upon to recover a dead body, sometimes referred to as a "floater".

This article is based on a research project completed at RTC, Yorktown, that strongly indicates that SAR personnel are not adequately trained, equipped, and prepared for the negative or down side of SAR missions when the rescuer is sent out to retrieve a corpse. The research demonstrated that the human consequences for SAR personnel are measurable, significant, and comparable to the experiences of those who go to war. Twenty percent of the SAR personnel surveyed returned from the mission suffering from Post-Traumatic Stress Disorder (PTSD). Further, sixty-five percent of those surveyed felt unprepared.

A total of 100 SAR personnel who had recovered corpses were given a self report questionnaire. They were asked to report on recovery preparation, process, debriefing procedures, and psychological trauma they experienced along with the reactions of other crewmembers. They were also asked to relate significant events around the recovery. The trauma questions and criteria for findings for PTSD were based upon the diagnostic criteria for PTSD found in the Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised, 1987.

There are two things crucial to understanding the problem of PTSD and SAR personnel. They are: (1) Understanding that PTSD as a reality for the rescuer and that their life has been significantly changed in a traumatic and persistent way. The disorder may remain with them for the rest of their life effecting them personally, socially, and professionally. (2) Crewmen should have a thorough understanding of recovery procedures and practices that require personal contact with decomposed and/or mutilated "floaters".

POST-TRAUMATIC STRESS DISORDER

Over 145 articles have been written since 1980 about PTSD. The literature concerned itself with Vietnam War Veterans, police officers, emergency service personnel and accident victims. However, no study considered the effect on SAR personnel. PTSD, for those who are not familiar with the psychiatric diagnosis, is an emotional and physiological reaction to a situation that would be considered traumatic to almost anyone, i.e. combat, accident, shooting, and recovery of a dead body. The victim of PTSD reacts to the trauma through: (1) persistent avoidance, i.e. does not want to talk about the event, tries to put the event out of their mind, avoids activities that would remind the survivor of the event, and emotional numbness: (2) through reexperiencing the trauma, such as nightmares, flash backs, overreacting to stimulus that is associated

with the trauma: (3) and through increased arousal such as difficulty falling asleep and staying asleep, irritability or outburst of anger, difficulty concentrating, hypervigilance, and increased startle responses. These symptoms will either be immediately experienced or they may be delayed.

Two long term complications are clinical depression and substance abuse. Alcohol abuse may be common to reduce stress, cope with negative feelings, sleep disturbances (getting to sleep and staying asleep) and depression.

THE RECOVERY PROCESS

The research revealed that the recovery process has five distinct phases, marked by associated difficulties. The first phase is the initial confrontation with the body. Sometimes the crew is alerted and sometimes the crew is not. Whether personnel are alerted, or come onto the body by accident the crews have the same reactions. Some of the crewmembers observed business like reactions, some crewmembers observed hysterical reactions, some reported joking, others questioning, and others silence as the body was recovered. In this study, joking and falling apart were the most frequently observed behaviors (forty-three percent). In twenty-two percent of the reports, one person was falling apart while another person was joking around. In nineteen percent of the cases, a business like attitude was reported.

The second phase of the recovery process is getting the body on board. A majority of respondents reported that this was the most difficult phase of recovery. The body, if it has been in the water for a long time, is terribly difficult to manage. It takes on a jelly like consistency, easily breaks apart, and has an awful rancid smell. Many reported that when a boat hook was used to retrieve a body, the arm of the victim, if engaged by the boat hook came off. Retrieval of the "floater" would be accomplished by bringing different body parts on board. If the boat hook failed, then the Stokes litter was used. When the litter was used, the body often seeped through. Some crews were able to put a blanket under the body and retain most of the mass, other crews proceeded with the litter and retrieved the skeleton. When the body was lifted out of the water, the crew continued to respond with the behaviors described above. Many reported that it is here crewmembers started to act out. Some went below decks, some became hysterical, some got ill and others went to another part of the boat. During this phase much of the trauma was experienced.

This was, for many, the first encounter with a corpse. The encounter was exacerbated by the condition of the deceased. Often they recovered corpses that were mutilated and decomposed. The water and aquadic life take their toll on the deceased; sharks, crabs, and other scavengers feed on the corpses, and the water turns the once solid human being into, again, a jelly like consistency. Further, some corpses were decapitated, some were burned or charred, and others had body parts missing. In one instance just the torso was recovered. As one respondent put it,"...it did not look human anymore." And another, "...the horror...the horror...I have never seen anything so grotesque." There are two things which stand out the most about the victim's body, the look on the face, and the smell. Some SAR personnel tend to avoid looking at the victim's face; others; out of curiosity stare and become personally involved. Often the face reveals the nature of the accident. The face may have a look of terror or agony or no expression at all. For some SAR personnel these victims become "mannequins." In most every case the "smell of death" was reported. This smell stays with the SAR person for a long time, and the smell will return long after the recovery. Some reported that they can no longer eat meat or sea food because the smell will trigger a "flash back."

The third phase of recovery process is retaining the body on board as the vessel transports the body back to the station. Many crewmembers have difficulty being in close proximity to the body. In some cases where there is no means of containing the body, the crew has to walk around in the body's fluids and remains. Others reported that they were able to contain the body with a bag and move the body from the rest of the crew. There were reports of the crew riding on the bow while the body rides in the aft of the boat. For the hour or more that the crew is with the body, they have no choice but to experience the fluids, the smell, and the presence of the corpse. Keep in mind, the crews reactions continue throughout this phase of the recovery. Some reactions intensify as some crew members continue to vomit, and others become more hysterical. There is no space or barrier on the small boat to keep them from the horrible aspects of the body.

The fourth phase of the recovery is docking, getting the body off the vessel, and encountering the loved ones of the deceased. Many times the loved ones are not around, other times they are and the crew, or some member of the crew has to manage the presenting psychiatric emergency. One respondent reported that he recovered a corpse that was decapitated and the wife of the victim was waiting at the pier. He was unprepared for the wife's response and he came away depressed and guilty; he did not know how to handle the situation. Also, the CO of the vessel, if not a PTSD victim, has to handle the psychiatric emergencies presented by other crew members. Many reported that they were unable to cope with the multitude of grief reactions presented by the survivors. One respondent reported that this was the most difficult aspect of the recovery. He related a sense of helplessness, grief, and guilt for having failed to handle the situation in a competent manner.

The fifth phase of the recovery process is walking away from the recovery, processing the experience, and living with the aftermath.

No one in the survey reported a formal debriefing process, or anything approaching a Critical Incident Stress Debriefing (see "On Scene", 2/90). They talked to other crew members individually, they talked to other crew members in a group, they talked to their wives, and they talked to no one. Eighty-three percent talked to some one after the recovery, and seventeen percent talked to no one. Less than half of the crew talked to other crewmembers about the recovery, less than a third talked to the group as whole about it, and almost a third brought the experience home and talked to their spouses about the recovery. One respondent reported that he refused to talk about the event to his wife, but she related to him that he would talk in his sleep about the incident and have night terrors. Did this informal debriefing process work and reduce the incidence of reported PTSD related difficulties? No, they were more likely to become symptomatic and suffer from PTSD.

FINDINGS

The survey of SAR personnel produced the following results: Thirty-five percent reported no difficulty with the recovery; thirty-four percent reported being symptomatic for PTSD. That is they reported one to three disturbances and they were symptomatic in no more than three of the general symptom categories for PTSD: persistent avoidance, reexperiencing and increased arousal. Nine percent were borderline for PTSD. They reported four or more disturbances which did not last longer than one month. Twenty percent, one out of five suffered from PTSD.

These SAR personnel experienced the same incidence of PTSD or higher than Vietnam veterans. The reason for these findings are pretty clear: (1) There is essentially no basic training for this SAR mission. (2) For many, this is the first encounter with death and certainly the first encounter with the horrible aspects of death...rotted, decomposed, and mutilated bodies. (3) The equipment currently used for the recovery process reportedly is either not routinely available (gloves, body bag, etc.) or it is totally inadequate. The boat hook and the Stokes litter, depending on the condition of the body may exacerbate the recovery process. (4) Crew members are not given formal guidelines for personal conduct during the recovery. Borderline PTSD victims and PTSD victims uniformly reported the interference of the crewmembers in their own efforts to cope with the event. (5) There is no formal debriefing process for the crewmembers after a particularly difficult recovery. (6) Crews are not trained to cope with the survivors crisis. (7) Because of no coherent doctrine or guidelines for attitudes regarding the status of the body: Is it a human being that they are recovering? Or, is it a "piece of trash?" SAR personnel experienced a profound and basic conflict on this issue: some maintained that what they were recovering was still a human being that should be afforded dignity and respect, and others felt that the "floater" was a "piece of trash" and treated it as such. As one respondent put it, "After a while, picking up floaters become a joke...just one big joke."

CONCLUSIONS

The survey group accounted for the recovery of 390 bodies. The average number of bodies recovered by each respondent is 4. This indicates that members of a SAR stations will recover more than one body and will have to go through the recovery event again and again, without the benefit of formalized preparation, training, and proper equipment. The findings of the study indicate that formalized preparation, training, and proper equipment are needed and required for this mission.

While no research can be definitive and universally persuasive, some significant research has been accomplished in this area. The findings of this research indicate that SAR personnel are at significant risk for PTSD when engaged in recovering "floaters." There are significant policy and procedural problems in this difficult SAR mission. These policy and procedural problems are major contributing factors in the high rate of PTSD that is now associated with this mission. ⚓

Proposed Policy and Procedures For The Recovery of D.O.A.'S

By: LT Philip C. Tundel, CHC, USNR, RTC Yorktown

RECOMMENDED POLICY AND PROCEDURES FOR THE RECOVERY OF D.O.A.'S

The previous article indicated that established Coast Guard doctrine and established procedures for this recovery mission were nonexistent. This lack of standard policy and training may be a contributing factor for the stress of the recovery mission. The following policy and procedural recommendations are offered to correct these problems.

POLICY RECOMMENDATIONS

Collectively, SAR personnel were unclear as to how they should understand the recovered body, how they should behave during the recovery process, and how to interpret this mission. There was a split within the SAR community regarding the status and treatment of the recovered body. In some cases the deceased was afforded all due respect and consideration of the survivors. On the other hand, the term "FLOATER' was used for the deceased and the remains were not treated respectfully (I could related some "sea stories" here, but I believe it would be counter productive).

DEHUMANIZATION AND INSENSITIVITY

There is a problem with the term "FLOATER" and its pervasive use with in the SAR community. The term "FLOATER" represents or symbolizes the ambiguity that SAR personnel have towards the deceased and the mission. The term lacks human sensitivity, is disparaging and disrespectful towards the deceased, makes a joke out of tragedy, and is not professional. SAR personnel who use the term "FLOATER" and who perceive this mission as an exercise in futility or an exercise of the absurd are demonstrating the "numbing effects" of PTSD. The recovery process is traumatic for them, as it would be for anyone else; however, when the term "FLOATER" is used the victim and the mission is devalued. This can be seen as a defense mechanism that hides or covers up their own anxious feelings regarding the work. A professional, consistent and sensitive policy position would maintain the human dignity of the deceased and the worth of the mission even in face of death and the grotesque aspects of the corpse. The findings indicated that sensitive crew members were as upset over the callousness and joking around as they were over the tragedy of the deceased; their sense of guilt and anger over the disrespectful behavior exacerbated their own feelings of regret and helplessness after the mission.

When personnel joke and behave in a disrespectful manner towards the deceased, command personnel should take immediate constructive action. Confront the individual in a supportive manner and get them to recognize their own issues regarding the victim and the meaning of the mission. When counseling regarding the beneficial aspects of the mission are not offered and personnel are left to their own resources, this "flight" behavior or avoidance behavior is more a lack of maturity and a lack of preparation than profound pathology. It is therefore incumbent that a doctrine or policy be established, so that personnel will have guidelines for interpretation of the mission and behavior before, during, and after. There should also be guidelines for treating and releasing personnel who either are unable or unwilling to cope professionally with the mission. The implementation of this doctrine and policy would rest upon experienced and trained leadership to address the problem and provide healthier means for coping with the D.O.A. and the mission. D.O.A. should be used in place of the term, "FLOATER".

OVER INVOLVEMENT AND PERSONALIZATION

From the extreme of complete dehumanization of the victim, we have the over involvement and over personalization of the victim. Often SAR personnel, for many reasons, become overly involved with the victim. They fantasize about the victim and take note of the victims characteristics, i.e., whether the victim is attractive or not, the wounds, etc.. They may come into personal contact with the victim through touching the skin, I suspect to examine the consistency or as a matter of having the "guts" to touch the deceased. When SAR personnel engage in these personal behaviors they become at risk for the reexperiencing characteristics of PTSD. These behaviors make a more profound impression on the memory of the rescuer. It is recommended that SAR personnel be trained not to get involved. They should avoid taking mental personal notes of the D.O.A., that is they should not look at the face of the deceased or take note of any damage to the body and they should not come into any personal contact at all.

THE VALUE OF THE MISSION

There is a profound, personal, and professional question that SAR personnel raise regarding the utility or benefit of bringing back the D.O.A.; sometimes the victim is burned, sometimes they are decapitated, mangled, eaten away by sea life, and sometimes virtually unrecognizable and barely resemble human life. For some the state of the D.O.A. is so bad, so horrible, the interpretation of the victim and the mission moves from compassion to the feelings of the absurd and a joke. The mission can become distasteful, disgusting, and futile. However, mission doctrine should incorporate the understanding of no matter how the body looks or smells it is still a human being. The mission should be carried out compassionately and professionally. SAR crews should keep in mind the D.O.A. was a human being who was loved and who will be missed by the survivors. When the crew returns the victim to his or her loved ones, they are providing a valuable service. Often survivors, even though they are grieving, are relieved that their love one has been found and that the victim can be prepared for the emotional closure and comfort that funerals can afford.

THE CREW AND SURVIVOR GRIEF REACTIONS

The research indicated that crews have difficulty in coping with the profound grief reactions of the survivors. When survivors are present at the time of the recovery, the rescuers come away with a sense of helplessness, failure, and guilt for not having the right thing to say or do. In the narrative section of the reports this sense of frustration and failure lingered long after the recovery. Crews often have unrealistic expectations of grief management and length of time necessary for grieving to run its course. SAR personnel should not explain the tragic event or offer theological explanations or observations about how the D.O.A. is better off or that the victim is in heaven how. Chances are the survivors will not comprehend what they are hearing, or they may very likely become offended. It is recommended that the spokesperson for the crew express concern and sympathy, offer to call the survivor's clergyman, and see to it that the survivor does not hurt themselves, i.e. offer transportation. Further, the crew spokesman depending on the state of the body, deter the survivor from viewing the D.O.A. or keep the involvement to minimum. While survivors may not remember what the crew said, they will remember their kindness, concern, and professionalism. They will take comfort in that.

Crews should keep in mind that the survivors will manifest a wide range of behaviors in response to seeing the victim. They will express grief, rage, anger, indifference, relief, hysteria,etc.. The crew should be prepared for such reactions and not take what is said by the survivor personally, nor should the crew accept blame for the demise of the victim. It can be said that the survivor is not thinking rationally and they are reacting out of a profound sense of loss, hurt, and grief. The spokesman should assure the survivor that everything was done to rescue the victim in the safest and timeliest manner possible and every precaution was taken to recover the body intact. It would be helpful here to point out that management of the survivor and their reactions requires preparation, training and experience. A non-rate or an immature crew member should not be placed in such a demanding and responsible position, nor should someone be delegated on the spot. The management of survivors can be expected and preparation for this crucial aspect of the recovery should be professionally handled.

Some care for practical concerns should be taken here. The crew should provide the survivor with a safe environment (if possible), a place for the survivors to sit down, tissue paper should be available, as well as water to drink, smelling salts, and the crew should have a chaplain or local clergy person on call. Further, the crew should not rule out emergency hospitalization for the survivor, as some do "lose it".

Finally, the D.O.A. should not be left alone, unguarded and unprotected after the crew has returned to the station. There were reports of the body being left on the dock, and a station's dog playing with the D.O.A. Another reported the playing of volleyball close to the deceased. What would have happened if the loved one of the D.O.A. arrived and witnessed any of these scenes? The mission of the crew is not over until the D.O.A. has been properly released. Concern for the dignity of the D.O.A. must be maintained at all times.

PROCEDURAL RECOMMENDATIONS

Current SAR practices for the recovery of D.O.A.'s are deficient, unsafe, and out of step with accepted procedures of other rescue organizations.

THOROUGH PREPARATION FOR THE RECOVERY

It is recommended that crews be thoroughly prepared for the encounter, transportation, off loading of a body, dealing with survivors, and dealing with personal issues. Some rescue crews make it a point to go over the recovery process in detail. Knowing what to do and what to expect will greatly reduce the trauma of the mission. This gives crewmembers the confidence they need. Training and preparation for an event is just as important or more important than having the right equipment for the mission.

IMPROVED TECHNICS AND EQUIPMENT FOR THE MISSION

The practice of bringing the body on board should be discontinued if at all possible. As indicated earlier, having the body on board exposes the crew to the horrible aspects of the victim. When the body is on board, the crew has to cope with the smell, the look of the body, and walk around in the fluids. Even after the clean up, the smell on shoes and equipment remains.

Many SAR crews use the boat hook to retrieve the body, sometimes with success and sometimes with failure. A better way to get control of the body is using chains and the boat hook. The chains are easier on the body and can be used to secure the body to the side of the vessel.

The metal Stokes litter should be done away with and the newer hard plastic litter used instead. The new litter is easier on both the living and the dead. It does not tear the skin of the victim, retains more body mass, and is easier to clean.

The body bag should be replaced with heavy duty water proof paper. The body bag requires too much contact with the victim. If the body has been in the water too long, then managing of the body (breaking limbs to fit into the bag) requires too much contact and involvement of the crew. The heavy paper can be placed on the litter, under the body, and the body can be easily wrapped up and secured. This should only require one person. Further, the body bag allows fluids and smell to escape while the water proof paper does not.

At SAR stations, where recovery occurs frequently, small boats should have a platform on the back of the boat. The platform should be four inches above the water. A platform has two significant advantages: (1) it keeps the body off the boat and (2) it's easier to get the body on a platform than it is to wrestle it over the side.

SAR crews should follow "Universal Precautions", that is, they should treat and be equipped as if every victim has an infectious disease, i.e. AIDS and hepatitis. This means a complete barrier between the rescuer and the victim should be in place. Equipment should include gloves, masks, and a water proof barrier between the crewmembers and the victim. Also, if any crewmembers have fresh or open wounds they should not handle the body. Further, although little known, bodies filled with gasses can explode, covering crewmembers with human debris and fluids. Crewmembers may take these fluids into their eyes, noses, and mouths. If the D.O.A. was an AIDS victim, the consequences for the crew would be disastrous. After recovery, crew members should have at their disposal disinfectant cleaning agents for use on their bodies. The use of these universal precautions were not reported to be practiced at every station.

I have the firm belief that if these proposed policies and procedures were accepted and implemented Coast Guard wide, the incidence of PTSD would drastically decline. Both rescuers and survivors would be better off. ☙

The receipt of Chaplain Tundel's articles caused much discussion among the staff of On Scene magazine. At our request, Headquarters Operational Medicine Division, G-KOM provided the following comment on the articles.

COMMENTS ON THE INCIDENCE OF POST-TRAUMATIC STRESS DISORDER IN SAR PERSONNEL

I agree that our SAR crews should be better prepared in what to expect when having to recover a body. Mental preparation is important for all SAR crew members, but may be especially important for those crew members who have not experienced this gruesome task before or who have not dealt with death before. A formal debriefing process may be helpful after a body recovery mission for those crew members who want one. As Chaplain Tundel points out in his article, management of the survivors and their reactions requires preparation, training and experience. Coast Guard personnel do not receive the special training required for this delicate task. Because of this, it might be prudent to select an experienced crew member who might be more comfortable communicating with family members.

The term "FLOATER" describes what type of victim is being picked up and is in no way intended to be disrespectful or to make light of a grave situation. In fact, the term may even help SAR personnel from becoming involved or personalizing the deceased. However, this term should never be used around family members of the victim any more than the term "DOA."

Although the mere thought of it may be repulsive to many, some humor or joking around within the confines of the crew can have some redeeming value. Some articles written in the EMS community claim this type of behavior is part of our coping mechanism and helps ordinary persons cope with extra ordinary grisly circumstances. Such behavior is very human and ought not be condemned as showing lack of maturity.

Post-Traumatic Stress Disorder (PTSD) is the development of characteristic symptoms following a psychologically traumatic event that goes beyond the range of healthy human response. Many varieties of psychological trauma can result in PTSD. Members suffering from PTSD usually require therapy. Some are eventually referred to the physical disability system. We have no evidence of applications for therapy or disability evaluations for PTSD due to psychological trauma from body recovery. ☙

The SAR Division At Coast Guard Headquarters Would Like To Wish You All A

Happy Holiday Season

Shown (or in some cases, only partially shown) from left to right:

CDR Greg Ketchen, LT Wes Driver (ear only!), Mr. Harry Bentrup, CDR Jim McGuiness (one of our better pictures of Mac), Mr. Jim Lombard, LCDR Frank Bradham, LT Rich Schaefer, ENS Kirk Schilling, LCDR Mike Monteith, LTJG Pat Geddes, CWO Jake Miller, Ms. Paula Batt, Ms. Sue Holden, CDR Steve Osmer, Ms Teresa Stevenson, CAPT Denny Freezer, LCDR Dave Breuninger, Ms. Willie Foster, ENS April Leath, Ms. Magilene Murrell (at least her hair & shoulder), CWO Mark O Hyde.

Not shown:

Mr. Dan Lemon, LCDR Paul Barger, LCDR M.J. Lewandowski, LT Steve Godfrey.

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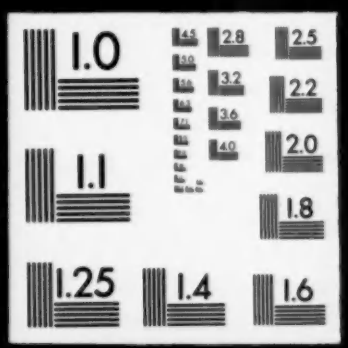
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